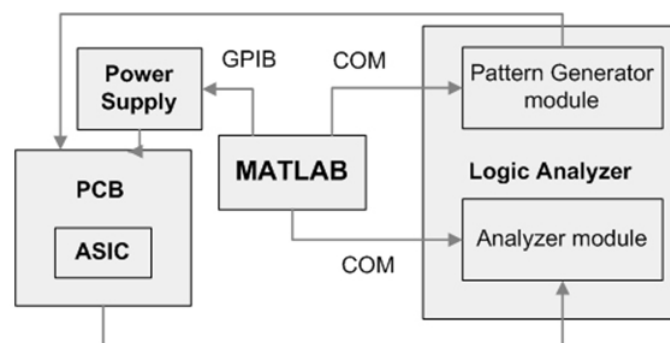


14AS035 Automatic and Systematic Control of Experimental Data Measurements on ASICs

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This paper presents a methodology to perform automatic and systematic characterization test on application specific integrated circuits (ASICs). Our methodology is based on the automatic control of all laboratory equipment and the data processing with Matlab. The ASIC, or digital system, is connected to controllable test equipment to generate patterns and collect the output data provided by the ASIC. The methodology that provides the Matlab script controlling the equipment, test process, making the analysis of the results and supervising the whole process, can be easily adapted to different experiments and ASIC features. The test of a piecewise affine (PWA) ASIC controller has been used to experimentally prove the automatic control in both open-loop as well as in closed-loop configurations, reducing the risk of manual measurement errors

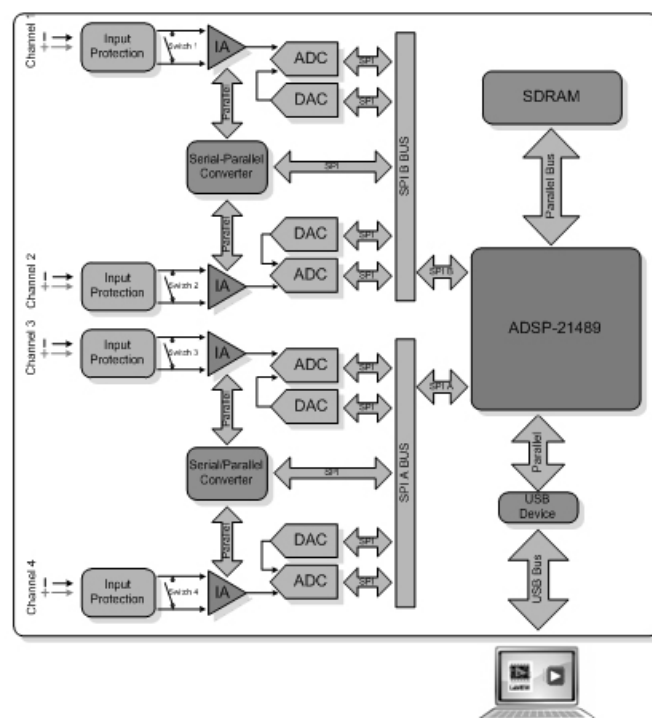


Setup and instrumentation control.

14AS038 DSP based data acquisition system with on-board processing

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This paper presents the development, implementation and characterization of a data acquisition system whose main requirement is the capability of processing the acquired data. The system features 4 differential channels, with simultaneous acquisition and a maximum sampling rate of 600 kS/s. In this context the ADSP-21489 digital signal processor is selected to control the system. The interface between the system and a personal computer is performed through USB Hi-speed protocol.



System architecture